

Connecticut Botanical Society

P.O. Box 9004, New Haven, CT 06532

~ Established 1903 ~

TESTIMONY RE SB 300: An Act Concerning New Britain Water Company Land

Public Health Committee
Connecticut State Legislature
Connecticut State Office Building
Hartford, CT 06062

Dear Senator Gerratano, Chairwoman, and Members of the Committee:

I am testifying on behalf of the CT Botanical Society (CBS) against SB 300. We are a statewide organization with approximately 300 members, devoted to the study, appreciation, and conservation of the native flora of the state. Our new president, David Yih, elected last Saturday, and three board members (myself, Juan Sanchez and Susan Robinson) have entered either oral or written testimony into the record opposing this bill. We oppose SB 300 for several reasons.

We are gravely concerned that the above-referenced proposal will harm the Shuttle Meadow watershed, and a unique and significant trap rock ecosystem. Stone dust is a serious pollutant associated with rock quarries, very difficult to control. Like the recently defeated Haddam Swap bill, this deal attempts to use a “special case” bill to circumvent the state’s existing statutes protecting water supply and environment, a dangerous precedent. The committee should understand that a reservoir is holding area for drinking water, not a watershed that supplies drinking water after natural filtration by soil and trees, and that no need for this reservoir has been established, as this proposal precedes completion of the state water plan, expected in 2017.

Aesthetic, educational, and scientific value is high in these trap mountain areas, which makes them popular destinations for hiking for individuals, families, and nature clubs. It typically takes less than half an hour to reach the open, rocky summit and grassy¹ glade habitats with views, blueberries, and unusual wildflowers. They are located close to the population centers of central Connecticut, a significant recreational resource contributing to fitness level in our state. Many of our CBS field trips explore trap rock habitats, that are designated CTECO Critical Habitats,

¹ Glades are a lawn-like habitat on very shallow soil consisting not of grass but a fine bladed sedge called Penn sedge or *Carex pennsylvanica*, with scattered other sedges and low wildflowers like wild geranium and spring cress, host plant for the state-listed orange falcate butterfly.

because they support outstanding biodiversity, of both flora and fauna, at least when in undisturbed condition.(See Figure 1, attached.)

Forested ridges adjacent to highways, residential areas, and quarries have an impressive capacity to muffle/block noise, to limit/block invasive seed dispersal, and to trap fine particulate air pollution. Environmental quality is improved in nearby residential areas and in the interior of a large ridge system, such as Bradley Mountain. Interior or core habitat will have substantially higher environmental quality, with far fewer invasives, and greater biodiversity, than the periphery. This is the case throughout the Metcomet traprock system, though data is lacking for Bradley Mountain.

The watershed land proposed to be quarried by Tilcon is centrally located within an extensive trap rock habitat block, 1.4 miles wide, west to east (over 1, 440 acres, to the northwest of Shuttle Meadow reservoir). Ragged Mountain lies to the southeast of Shuttle meadow reservoir, with well-documented, outstanding biodiversity, and well- used by for recreation. The overall habitat block, shown in Figure 2, including both Bradley and Ragged Mountains, is extensive enough to hold large gene pools² of uncommon and some rare species, including forest interior songbirds³, vernal pool amphibians (probably state-Threatened Jefferson salamander), and eastern box turtles. The interior of this habitat block is also far enough from artificial light sources, that insect populations are not depleted by attraction to lights at night (Longecore et al 2004). This interior part of the Metacomet Ridge is also expected to support sizable and genetically diverse populations of special plants: wildflowers , rock ferns, dwarf shrubs, mosses, lichens, and potentially, a CT-threatened aquatic tree, the swamp cottonwood. The proposed quarrying of a 131-acre area would fragment the overall habitat block and degrade adjacent habitat, as shown in Figure 2.

Uncommon to rare plants, like *Corydalis flavula* and *Dicentra cucullaria* (Dutchmens Breeches) are prevalent in the Metacomet Ridge system (except on the disturbed periphery) with subacidic soils (rich in calcium and other minerals like magnesium), derived from trap rock parent materials. These minerotrophic species are less common or absent in more acidic soils over crystalline bedrock (e.g. granite or gneiss) or arkose sandstone, as documented by the research of Karen Searcey in the Holyoke traprock range (2003). This is also the case where

² Very small populations of both plants and animals steadily lose genetic diversity with each generation, due to random genetic drift and insufficient genetic alleles to adapt to change. They typically suffer inbreeding depression, and are not sustainable over the long term.

³ An extensive body of avian research has identified a suite of area-sensitive migratory songbirds, which do occur in interior forest, but do not successfully breed in shown an edge zone, 300' to 600' wide (Whitcomb et al 1981, Temple (1988), and Askins et al 1990). Even considering that existing blasting noise from the north is expected to reduces wildlife usage in the northern portion, this area holds much core habitat (defined as over 600 feet from an edge) for area-sensitive, forest interior bird species.

limestone areas adjoin more acidic soils, as documented in research by Johnson and Leopold (2004). Other trap plant species have a statewide distribution but are limited to the special microclimates that the Metcomet Ridge system shares with other rocky ridges and mountains: very shallow, rocky soil; cliffs; exposed, open rocky outcrops; and deep, cold talus. Note that cliffs, open outcrops, and talus are also designated critical habitats by CTDEEP, regardless of bedrock type.

CBS has conducted botanical field trips on most of the trap ridges that I have explored: East Rock in New Haven, Peters Rock in North Haven, Sleeping Giant in Hamden, Beseck Mtn in Wallingford, West Rock in New Haven and Hamden, Prospect/Peck Mountain, in Cheshire; Mt Higby in Middletown; the Hanging Hills in Meriden and Berlin; Chauncey/ Lamentation Mountain in Berlin and Meriden; Cedar Mountain in Newington; MDC-owned trap formations in West Hartford, Cathole Mountain in Meriden and Berlin and the unnamed east-west ridge in Rocky Hill behind Dinosaur State Park. Each has its own unique combination of flora and fauna, and unique geologic features and views. Only a few areas have extensive unfragmented habitat comparable to Bradley Mountain. I am unfamiliar with the unquarried portion of Bradley Mountain, but it should be carefully studied before rock extraction is even considered. Note that several peripheral portions of the Metacomet Traprock System are unfortunately already severely degraded by invasive species. Could such areas be more suitable locations for short term extraction of basalt gravel, provided remnant trap species were carefully salvaged, for restoration elsewhere?

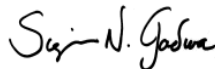
The position of the Connecticut Botanical Society is that biodiversity, as well as hydrology and geology should be carefully studied and documented – by objective third party scientists, not consultants accountable to Tilcon (North American Reserve, LLC). CBS maintains that before a proposal such as this is even presented for consideration, a detailed alternatives analysis is needed, one that considers the quality of all Tilcon's other holdings of land with basalt bedrock, compared to the interior of Bradley Mountain. Finally, wherever quarrying is permitted, a thorough, ecology-based, restoration plan should be developed, in consultation with the New England Wildflower society (leaders in native species propagation in New England). Note that CBS botanists and Plainville residents have observed wholly inadequate restoration in former Tilcon quarries.

We are also gravely concerned that CTECO aerial mapping clearly shows that the proposed quarry expansion footprint overlaps large vernal pools and hatched NDDB areas. See Figure 12, attached. The hatched "blobs" depict a CTDEEP critical habitat (sub-acidic rock outcrop summit) with an elevated biodiversity and probability of rare species. Vernal pool surveys should be carried out in early spring, but next year should suffice, as the state water plan will not be complete before 2017.

To summarize: the botanical diversity of both the Metacomet ridge system (trap) is the result of several factors in combination. Sweet, calcium-rich soil develops from volcanic basalt or diabase (trap rock), and a variety of microclimates related to ridge orientation and structure. Geology is fascinating, and trap rock ridges provide outstanding field trip sites for teaching. Sub habitats include cold talus slopes with northern species and open summits where male butterflies wait to rendezvous with a female, per the lepidopteran section (by D. Wagner) of *Trap Rock Ridges of Connecticut: Natural History and Land Use* by P. Sharp (2013). We have given each committee member a copy of this book, and entered it into the record. The author is the late botanist/wetland scientist Penelope Sharp, a long-time officer of CBS, with several chapters by other experts on geology and fauna. It is of particular value to Connecticut land use decision makers, as it addresses not only biodiversity, but also the value of the trap rock ridges for water supply and water filtering, and as a mineral/rock resource. This book was jointly published by the CT Arboretum (Bulletin 41) CTDEEP (Special Publication #3). Order from www.ctdeepstore.com. On March 7, accompanying oral testimony by Gadwa & Sanchez, CBS entered into the Hearing Record hard copy maps showing critical habitat hatched areas, probable vernal pool locations within the expansion footprint, and a close-up of two pools with aquatic shrubs that could be swamp cottonwood. Electronically attached to this testimony is Figure 1, showing both CTECO hatching and likely vernal pools, and Figure 2, a USGS topo map showing the width and ecological integrity of Bradley Mountain on the western edge of the Metacomet traprock system, just east of I-84 and south of Rt. 72 in the vicinity of the proposed quarry expansion.

In conclusion: SB300 includes no mention of a thorough environmental impact statement by an objective third party environmental scientists. These ridges provide very pleasant, interesting, accessible, and healthful outdoor recreation, and are outstanding sites for education in the biological and earth sciences. They are important for the state's health & quality of life as well as the drinking water supply. Another concern relevant to the public health committee is the threat to other open spaces used for healthful hiking because of the precedent set by this proposed swap of forest watershed lands for tax revenues, lease revenues, and a new reservoir, without even an EIS beforehand.

Respectfully submitted,

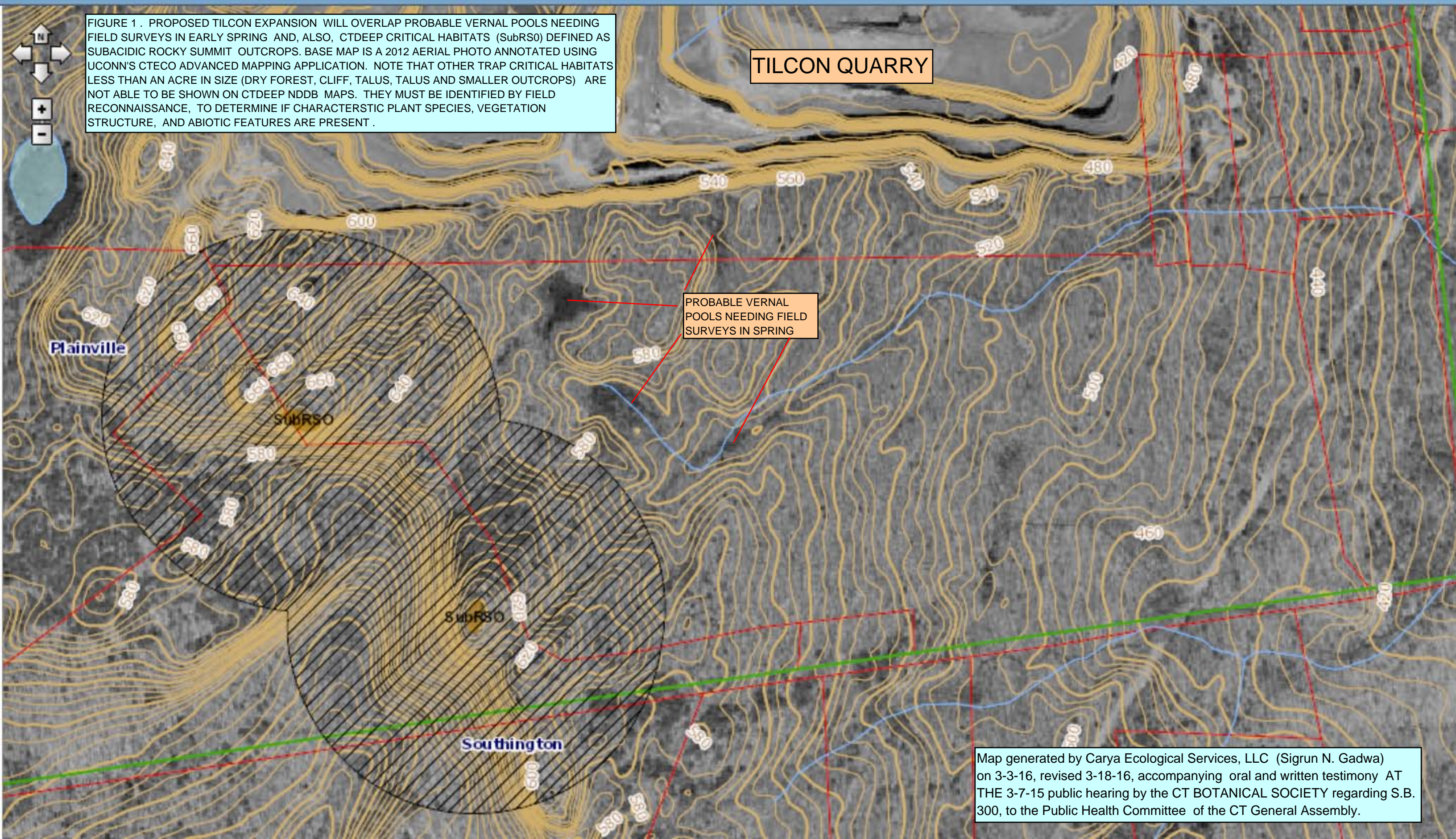


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Attachments: Figures 1 and 2

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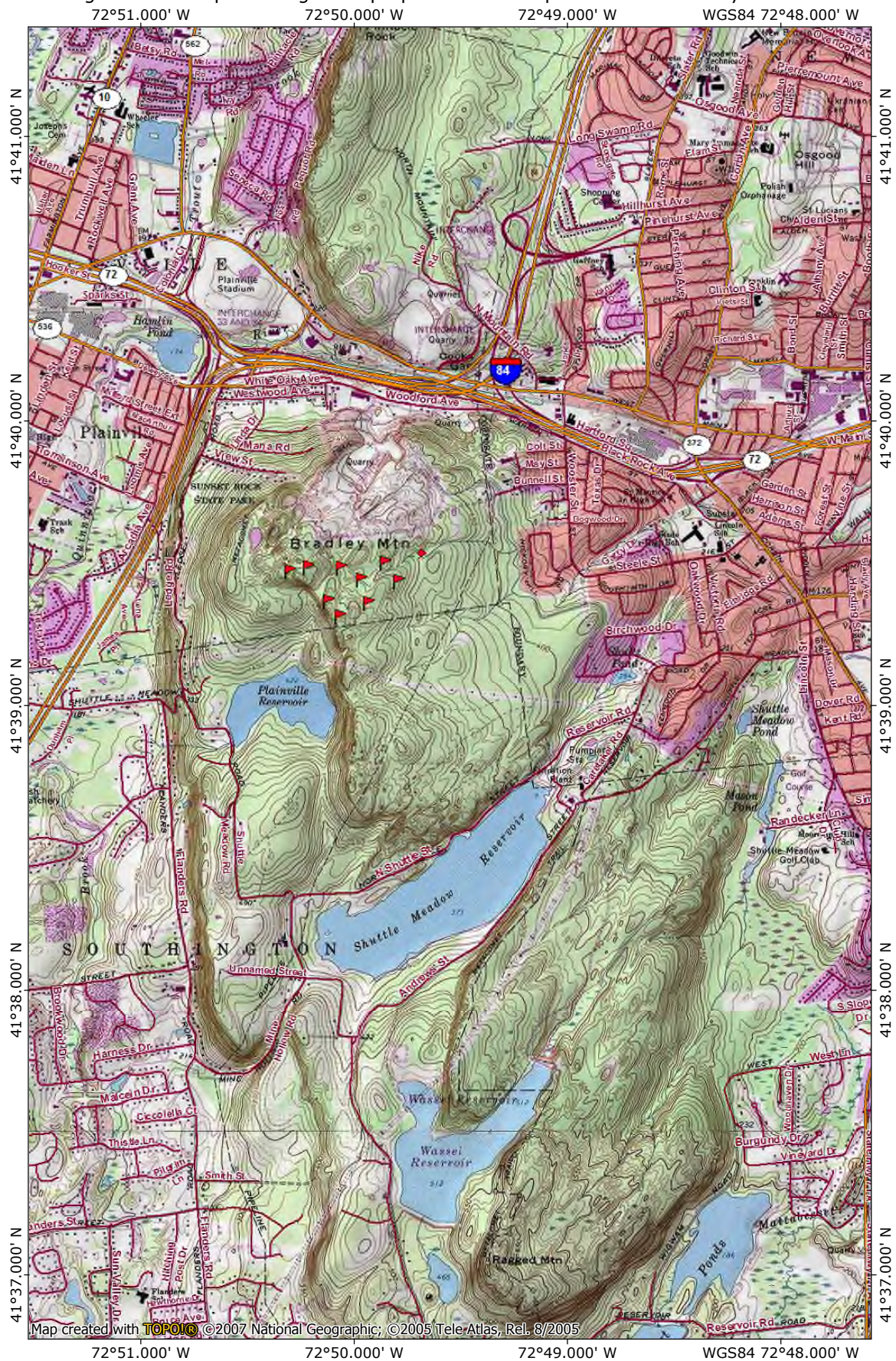
TILCON QUARRY

PROBABLE VERNAL
POOLS NEEDING FIELD
SURVEYS IN SPRING

FIGURE 1 . PROPOSED TILCON EXPANSION WILL OVERLAP PROBABLE VERNAL POOLS NEEDING FIELD SURVEYS IN EARLY SPRING AND, ALSO, CTDEEP CRITICAL HABITATS (SubRSO) DEFINED AS SUBACIDIC ROCKY SUMMIT OUTCROPS. BASE MAP IS A 2012 AERIAL PHOTO ANNOTATED USING UCONN'S CTECO ADVANCED MAPPING APPLICATION. NOTE THAT OTHER TRAP CRITICAL HABITATS LESS THAN AN ACRE IN SIZE (DRY FOREST, CLIFF, TALUS, TALUS AND SMALLER OUTCROPS) ARE NOT ABLE TO BE SHOWN ON CTDEEP NDDb MAPS. THEY MUST BE IDENTIFIED BY FIELD RECONNAISSANCE, TO DETERMINE IF CHARACTERSTIC PLANT SPECIES, VEGETATION STRUCTURE, AND ABIOTIC FEATURES ARE PRESENT .

Map generated by Carya Ecological Services, LLC (Sigrun N. Gadwa) on 3-3-16, revised 3-18-16, accompanying oral and written testimony AT THE 3-7-15 public hearing by the CT BOTANICAL SOCIETY regarding S.B. 300, to the Public Health Committee of the CT General Assembly.

Fig. 2. Landscape Setting of of proposed Tilcon Expansion into Bradley Mountain



0.0 0.5 1.0 miles
0.0 0.5 1.0 1.5 km

MN * TN
13 1/2° N
03/22/16